Organizing Committee
for IREI Air Safety

234672

FAA-02-13464-39

October 25, 2002

Mr. Hal Jensen
Aerospace Engineer
Aircraft Engineering Division AIR-120
Federal Aviation Administration
800 Independence Avenue, SW
Washington, D.C. 20591
U.S.A.

Re: Improved Seats in Air Carrier Transport Category Airplanes, Proposed Rule

Dear Mr. Jensen

It was very fortunate for me that I met you at the SAE S-9 Cabin Safety Provisions Committee Meeting in Reno, Nevada on October 8, 2002 with regard to the above titled NPRM. You were very kind to give me the document that you so quickly prepared for me.

Following the contents of the document, I have prepared two copies of my comment on the proposed rule, and a self-addressed post card which are enclosed in this letter.

This is the first time experience for me to send a comment to the proposed rule of the U.S.A. I shall be much obliged to you if you will kindly check my document and advise me if there is anything that I should do to complete the document. If you think my document has no problem, please kindly transfer it to the docket.

Thanking you in advance,
Yours sincerely,

T. Kawakita

Takao Kawakita
Chairman

Organizing Committee
for IREI Air Safety

Comment on 14 CFR Part 121
Improved Seats in Air Carrier Transport Category Airplanes; Proposed Rule

[Docket No. FAA-2002-13464; Notice No. 02-17]

October 25, 2002

I am writing this comment as a representative of Organizing Committee for IREI Air Safety, a voluntary group of more than 30 bereaved families from the JAL123 crash which took place on August 12, 1985 in UENOMURA Village, GUNMA Prefecture, Japan. The group has been demanding, with the prayer for the peaceful rest of souls of the dead, that the lessons learned from the disaster should be reflected in the future improvements in air safety. The crash recorded 520 fatalities and 4 severe injuries on board the aircraft, the worst toll number in the history of a single aircraft crash. I myself lost my daughter, 22 years of age. In order to catch up with the current air safety technologies, topics and trends, I have been attending the SAE S-9 Cabin Safety Provisions Committee since 1988. Our group has been holding meeting with JCAB officials since 1988, and has been demanding the actual practical improvements in many ways. The most recent, and 42nd since the first in 1988, meeting was held in June this year.

Standing on the ground mentioned above I express our sincere support to the proposed rule, Improved Seats in Air Carrier Transport Category Airplanes. The reasons, historical review and future prospect shall be described below.

1) Official report on the JAL123 crash

According to the official report of AAIC (Aircraft Accident Investigation Commission), a version of NTSB in Japan, JAL123, B-747 SR-100 took off HANEDA, Tokyo airport bound for ITAMI, Osaka with 524 people on board. During the flight the aircraft lost its ability of steering, and, after 32 minute desperate flight, crashed onto a mountainous terrain. Though it seemed to be a hopeless hard crash, 4 passengers who were seated in the most rear portion of the aircraft survived. It was a wonder, the origin of the activities of our IREI Air Safety group.

We learnt that the destruction of the forward portion of the large fuselage of the Jumbo B-747 absorbed the impact force, and during the propagation of the initial impact it went down to the level that would give the people in the rear portion of the aircraft the chances to survive.

AAIC estimated the magnitude of the impact which the occupants of the seats in the most aft portion of the aircraft received to be several tens of g (A).

AAIC also quoted the g values in the document NTSB-AAS-81-2, Cabin Safety in Large Transport Aircraft, 1981 which describes the human tolerance to the impact (B).

From the combination of (A) and (B), AAIC concluded "The several tens of g inflicted on the occupants of the seats far surpasses the limit of fatal injury. Thus, theoretically speaking, there was no chance for whole people on board JAL123 to survive. It was a miracle that 4 passengers survived." ①

I myself studied the contents of NTSB-AAS-81-2 and found that AAIC made a mistake in

interpreting the numerical g data as the limit of fatal injury. The fact is that they are not the limit of fatal injury but the limit of irreversible injury. Several tens of g corresponds to the life/death transitional area. It was no wonder, therefore, that there were 4 survivors.
According to the testimonies of the 4 survivors, there were plural number of people, other than the 4, who were actually speaking or making voices after the moment of the crash.
Dr. R. G. Snyder, a close friend of mine and an authority of the research on the human tolerance to impact, sent me a letter dated April 24, 1989. He criticized the AAIC report unsparingly and supported my idea. ②
It is quite possible that, if the rescue party had reached the JAL123 crash site earlier enough, the number of the survivors would have been increased.
Our group demanded that AAIC should recognize their mistake and correct the discussion on the survivability of the occupants of the seats in the most rear portion of the aircraft.
AAIC however, for fear of losing their face, refused to correct the report with combination of absurd rhetorical excuses. This shameful unsolved status is still remaining in Japan. I believe, however, time will solve the matter and such bureaucratic deception shall be convicted.
Regardless of this scandal, what I want to stress here is that in the case of wide-body large aircraft, the attenuation of crash energy will take place during the propagation of the initial impact through the fuselage and it results in the possibility of making a room for the occupants to survive. If JAL123 had been equipped with the seats of higher strength that shall be regulated by the proposed rule, the number of the survivors must have been increased. This phenomenon should be taken into account in evaluating the merit of newly strengthened seats.

2) Mechanism of killing in airline crash and safety discrimination
Right after the JAL123 crash, all of the bereaved families were forced to suffer hell of searching for the body of their beloved one among many other bodies of the victims. Through this work they learnt the results of the mechanism of killing. Head was crashed into pieces. Body was cut into two pieces at abdomen. Limbs were split up into pieces. I myself took up and examined many split pieces of human bodies to recover my daughter's body. I shall never forget the scene.
From the geometrical surrounding configurations of passenger's body in the cabin, and the hell experiences described above, the bereaved families had the conclusion "Seats killed passengers." Torao Imanaru, a dentist who examined the bodies wrote, in the report issued by the Gunma Prefecture Dentists Association, "The bodies of stewardesses seemed to be less damaged thanks to their rear facing seats. Passengers' bodies were cut by lap belt of forward facing seats." ③
We, the bereaved families were taught there had been such hidden safety discrimination in the cabin. We received a deep trauma which has never been healed still now.
While it is well known by the public that the aircraft crashes give disastrous damage to the people on board, it is almost not known that there exists such technical safety discrimination between the passengers and cabin attendants. Such concept of discrimination is against the social common sense and, therefore, airline companies have been endeavoring not to divulge such facts.
I forecast and wish the time will come when this facts will become a world wide theme of

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public debates and trigger the future step to the reasonable solution of the problem.

3) Development of safer seats in Japan lead by JCAB

After the bereaved families from the JAL123 crash knew that the passengers had mainly died of fatal injuries at head and abdomen caused by the interaction with seats, Organizing Committee for IREI Air Safety earnestly demanded that JCAB takes the lead in developing passenger seats that will give safer protection to the occupant especially with regard to head and abdomen.

Responding to our request, JCAB decided to run 3 year project with 90 million yen budget from 1991 to develop 2 kinds of safer seat, rear-facing seat and seat with shoulder harness.

The team made of various Japanese companies in aircraft industry succeeded in developing 2 kinds of new model that passed the dynamic tests using dummy. The seats were tested by actual use in freighter and were proved to be usable.

Presently the above new prototype models have never been used in the actual airline passenger aircraft. However, the basic analysis and knowledge gained during the process of developing the new models, I believe, are the assets of Japanese aircraft industry that can be used in contributing to the development of new type model of advanced design in the future.

4) Future prospects for safer seat

As I described in the beginning of this comment, we, Organizing Committee for IREI Air Safety express our sincere support to the proposed rule, Improved Seats in Air Carrier Transport Category Airplanes. Yes, it is very good because it does contribute to the increase in the survivability rates even in the hard crash such as JAL123.

We, however, are not fully contended with the new "Improved Seats" because there still remains the safety discrimination between passenger and cabin attendant.

We earnestly wish FAA, with humanitarian ground and far reaching insight, moves to the action of solving the problem of discrimination in the future.

Air-bag system which is widely used in automobile industry, for example, can be used to contribute to the increase in airline cabin safety. If FAA shows the flag, aircraft industry will move to the direction of economically feasible design of non-discrimination seats.

I close with a prayer that FAA steps towards the direction described above.

T. Kawakita

Takao Kawakita
Chairman
Organizing Committee for IREI Air Safety

Attached documents:

① AAIC Report in Japanese and English translation
② R. G. Snyder's letter to Takao Kawakita
③ Torao Imanaru's report in Japanese

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